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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/592,967

09/14/2006

Shigeki Satou

890050.547USPC

6261

500 7590 08/13/2009
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EXAMINER

PAK, HANNAH J

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

08/13/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/592,967	Applicant(s) SATOU ET AL.	
	Examiner Hannah Pak	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/21/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All outstanding rejections, except for those maintained below, are withdrawn in light of applicants' amendment filed on 04/21/2009.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.
3. The new grounds of rejection set forth below are necessitated by applicants' amendment filed on 04/21/2009. Claims 1 and 3 are amended to further limit the kinds solvent used in the dielectric paste. The elimination of unpatentable alternatives from a Markush group, with or without election of species, does not prevent a final as long as the grounds of rejection are in direct response to the amendment. Hence the final is warranted and is proper.
4. The terminal disclaimers filed on 04/21/2009 overcame the obviousness-type double patenting rejections of application no. 10/592,895, 10/590,538, 10/590,749, 10/582,995 and 10/582,994.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drozdyk et al. (US 5,106,796) in view of Adams Jr. et al. (US 3,848,965) and Donohue et al. (4,959,330).

Drozdyk et al. disclose a thick film dielectric paste useful for multilayer ceramic capacitors (Col. 1, lines 5-20). The dielectric paste contains various polymeric materials employed as binders, including butyral resins, e.g., poly vinyl butyral, and ethyl cellulose (Col. 3, lines 45-50 and Col. 4, lines 25-35). Drozdyk et al. also disclose the thick film paste can be screen printed in the desired pattern over the patterned layer and exposed parts of the dielectric substrate (Col. 5, lines 45-55).

Although Drozdyk et al. mention using organic solvents, such as terpenes (e.g., alpha terpineol) and butyl carbitol acetate, to prepare their dielectric paste (Col. 3, lines 37-45), they do not mention the specific organic solvents recited in claims 1 and 3.

Adams, Jr., et al. teach using suitable optical active material, such as l-menthone, to form layers or films, which exhibit desired dielectric properties (Col. 9, line 44-Col. 10, line 12).

Given the above teachings, it would have been obvious to one of ordinary skill in the art to use the l-menthone taught by Adams, Jr., et al. as the organic solvent of Drozdyk et al. to obtain desired dielectric properties suitable for layers or films.

Regarding claims 1-4, Drozdyk et al. do not mention the specific molecular weight of their ethyl cellulose binder. However, Donohue et al. teach using various polymeric materials, including ethyl cellulose, having a molecular weight of 50,000-100,000 (Col. 6, lines 10-45), which overlap with those recited. Donohue et al. also

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teach ethyl cellulose is especially preferred because it has a desired formulation viscosity (Col. 5, lines 40-46). Thus, it would have been obvious to one of ordinary skill in the art to use the ethyl cellulose taught by Donohue et al. as the binder of Drozdyk et al. to obtain advantageous properties for thick film compositions.

6. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drozdyk et al. (US 5,106,796) in view of Adams Jr. et al. (US 3,848,965) and Donohue et al. (4,959,330) as applied to claims 1-4 above, **and** further in view of Kobayashi (Machine Translation of JP 09-124771).

The disclosures with respect to Drozdyk et al., Adams Jr., et al., and Donohue et al. in paragraph 5 are incorporated here by reference. They do not mention the degree of polymerization and butyralization of their butyral system resin.

However, Kobayashi teaches a butyral resin having a degree of polymerization of 1,500-2,500 and a degree of butyralization of at least 65 mol percent (see, for example, abstract). The butyral resin is used in films suitable for electronic components, such as semiconductors and circuit boards (Paragraphs 1-2). The advantages involved include excellent storage stability and adhesive strength (Paragraphs 3 and 23).

Given the above teaching, it would have been obvious to one of ordinary skill in the art to employ the butyral resin having the appropriate degree of polymerization and butyralization taught by Kobayashi as the butyral resin of Drozdyk et al. with a reasonable expectation of successfully obtaining the dielectric paste for electronic components with desired properties.

Conclusion

7. The applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hannah Pak whose telephone number is (571) 270-5456. The examiner can normally be reached on Monday - alternating Fridays (7:30 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hannah Pak
Examiner
Art Unit 1796

/HP/

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796